Tank TA26

B5397

Service Engineer’s Manual

PREFACE

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Version 1.0

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Operation is subject to the following conditions:

1) This device may not cause harmful interference, and

2) This device must accept any interference received including interference that may cause undesired operation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Plug the equipment into an outlet on a circuit different from that of the receiver.

Consult the dealer on an experienced radio/television technician for help.

Notice for Canada

This apparatus complies with the Class B limits for radio interference as specified in the Canadian Department of Communications Radio Interference Regulations. (Cet appareil est conforme aux norms de Classe B d'interference radio tel que specifie par le Ministere Canadien des Communications dans les reglements d'ineteference radio.)

Notice for Europe (CE Mark) This product is in conformity with the Council Directive 89/336/EEC, 92/31/EEC (EMC).

CAUTION: Lithium battery included with this board. Do not puncture, mutilate, or dispose of battery in fire. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by manufacturer. Dispose of used battery according to manufacturer instructions and in accordance with your local regulations.

About this Manual

This manual provides you with instructions on installing your Tank TA26 B5397. This manual is intended for experienced users and integrators with hardware knowledge of personal computers.

This manual consists of the following parts:

Chapter 1: Provides an Introduction to the TA26 B5397 barebone, packing list, describes the external components, gives a table of key components, and provides block diagrams of the system.

Chapter 2: Covers procedures on installing the CPU, memory modules, PCI-E card, hard drives, and floppy drive.

Chapter 3: Covers removal and replacement procedures for pre-installed components

Appendix: Provides instructions on installing the SO-DIMM card. Describes the differences between mainboard BIOS and system BIOS. The cable connection and FRU parts tables are also provided.

For information on the mainboard, please refer to the attached mainboard user's manual. You can find the detailed description about jumper and BIOS settings from the motherboard manual.

SAFETY INFORMATION

Before installing and using the TA26 B5397, take note of the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Do not block the slots and opening on the unit, which are provided for ventilation.
- Only use the power source indicated on the marking label. If you are not sure, contact the Power Company.
- The unit uses a three-wire ground cable, which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
- Do not place anything on the power cord. Place the power cord where it will not be in the way of foot traffic.
- Follow all warnings and cautions in this manual and on the unit case.
- Do not push objects in the ventilation slots as they may touch high voltage components and result in shock and damage to the components.
- When replacing parts, ensure that you use parts specified by the manufacturer.
- When service or repairs have been done, perform routine safety checks to verify that the system is operating correctly.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- Cover the unit when not in use.

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Chapter 1: Overview

1.1 About the TYAN Tank TA26 B5397

Congratulations on your purchase of the TYAN Tank TA26 B5397, a highly-optimized rack-mountable barebone system. The Tank TA26 B5397 is designed to support two Intel Dual-Core Xeon 5100/5200 Series, Quad-Core Xeon 5300/5400 Series processors, providing a rich feature set and incredible performance. Leveraging advanced technology from Intel, the Tank TA26 B5397 server system is capable of offering scalable 32 and 64-bit computing and high-bandwidth memory design. The Tank TA26 B5397 not only empowers your company in today's demanding IT environment but also offers a smooth path for future application usage.B5397

TYAN is also proud to deliver the Tank TA26 B5397 in SAS flavor while supporting up to eight (8) hot-swap hard drives and one (1) slim DVD-ROM drive. The Tank TA26 B5397 uses TYAN's latest tooling-made chassis featuring a robust structure, tool-less and modularized design, and a solid mechanical enclosure. All of this provides the Tank TA26 B5397 the power and flexibility to meet the needs of nearly any server application.

1.2 Product Models

Model	HDD Bays	Backplane	Power Supply
B5397T26W8H	8	8-port SAS/SATA	Single 700W
B5397T26W8HR	8	8-port SAS/SATA	700W 1+1 redundant

1.3 Features

Enclosure
- Industry 2U rack-mountable chassis
- Storage bay:
  - (8) 3.5” HDD bays
  - (1) slim line ODD bay
- Dimensions:
  - D 26 x W 16.7 x H 3.4 inch
  - D 660 x W423 x H 87 mm

Motherboard
- TYAN Tempest i5400PW S5397
- SSI/ Extended ATX (12” x 13”)

Processors
- Dual LGA771 sockets
- Supports one or two Dual-Core Intel® Xeon® 5100/5200 Series, Quad-Core Intel® Xeon® 5300/5400 Series processors
- 1066/1333/1600MT/s system bus
- VRD 11.0

Chipset
- Intel® i5400B MCH chipset
- Intel® 6321ESB I/O Controller Hub
- Winbond 83627HF Super I/O chip

Memory
- Total sixteen (16) 240-pin DDR2 FBDIMM sockets
- Supports up to 64GB DDR2-533/667/800 FBD memory

Video
- XGI Z9S, PCI interface
- 32MB DDR2 memory

BIOS
- Phoenix BIOS® on 8Mbit Flash ROM
- Supports ACPI 1.0b
- Serial Console Redirect
- PXE via Ethernet, USB device boot
- PnP, DMI 2.0, WfM 2.0 Power Management
- User-configuration of H/W monitoring
- Auto-configuration of hard disk types
- Multiple boot options
- 48-bit LBA support

Expansion Slots
- Two (2) PCI-E x16 slot (w/ x16 PCI-E Gen2 signals from MCH)
- One (1) PCI-E x8 slot (w/ x4 signals)
- Two (2) PCI-X 133/100MHz slots
- One (1) PCI 32/33MHz slot
- Supports total six (6) low-profile expansion cards

Back I/O Ports
- One stacked keyboard & one PS/2 mouse ports
- Two (2) stacked USB 2.0 ports
- One (1) 15-pin VGA port
- One (1) 9-pin serial port
- Two (2) stacked RJ-45 x 2 LAN + one RJ-45

Front Panel Features
- I/O
  - (2) USB 2.0 ports
- LED indicators
  - Power LED
  - (2) LAN LEDs
  - HDD Active LED
  - ID LED
- Switches
  - Power
  - Reset
  - ID

Storage Controller
- SATA Controller
  - Four (4) SATA 2.0 ports from Intel ESB6321
  - RAID 0, 1, 5, 10 supported (Windows only)
- SAS Controller
  - LSI® 1068E SAS controller with PCI-E x8 interface
  - Two (2) mini SAS (4 in 1) connectors
  - RAID 0, 1, 1E supported

Server Management

- Automatic fan speed control
- Chassis intrusion alert
- Supports TYAN Server Management (TSM)
- Optional TYAN SMDC M3295-2/M3296, IPMI v2.0 compliant remote server management kit

(Note: SMDC support will be available from S5397 R03 (PCB Rev. MOA) and beyond version.)

Storage Backplane

- One (1) 8-port SAS backplane, supporting up to 8 SAS HDDs or SATA HDDs

Networking

- One (1) Intel Gilgal (82563EB) PHY
- Direct link to ESB6321
- Two gigabit LAN ports
- Two front panel LED pin headers

Power Supply

- EPS 12V, 2U, 700W high efficiency power supply (80+) with PFC for B5397T26W8H
- EPS 12V, 2U, 700W 1+1 redundant power supply (80+) with PFC for B5397T26W8HR

Regulatory

- FCC Class B (Declaration of Conformity)
- CE (Declaration of Conformity)

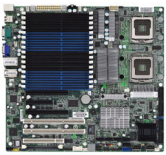
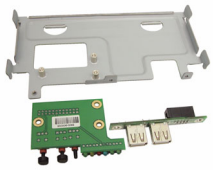
Environment Temperature

- Operating temperature 5^{O}C~35^{O}C
- Non-operating temperature -40^{O}C~ 70^{O}C

1.4 Unpacking

This section describes the TA26 B5397 package contents and accessories. Open the box carefully and ensure that all components are present and undamaged.

1.4.1 Box Contents

Component	Description
	Industry standard 2U chassis, (8) hot-swap HDD bays
	TYAN Tempest i5400PW S5397 motherboard (pre-installed)
	Slim DVD-ROM drive (pre-installed)
	LED and USB control board (pre-installed)
A B	EPS 12V, 2U, 700W PSU with PFC (pre-installed) (A) EPS 12V, 2U 700W 1+1 Redundant PSU with PFC (pre-installed) (B)
A B	System Fans: 1 x (60mm x 60mm) (A) 2 x (80mm x 80mm) (B)

1.4.2 Accessories

If any items are missing or appear damaged, contact your retailer or browse to TYAN's Web site for service: http://www.tyan.com.

The Web site also provides information on other TYAN products, plus FAQs, compatibility lists, BIOS settings, and more.

1 x TYAN Driver CD

CPU Heatsink

Unit Handles

Power Cables
Left to right: Europe, US

FDD Cable

Barebone Manual &
Mainboard Manual

Screw Pack

FDD Rails

FDD Power Cable

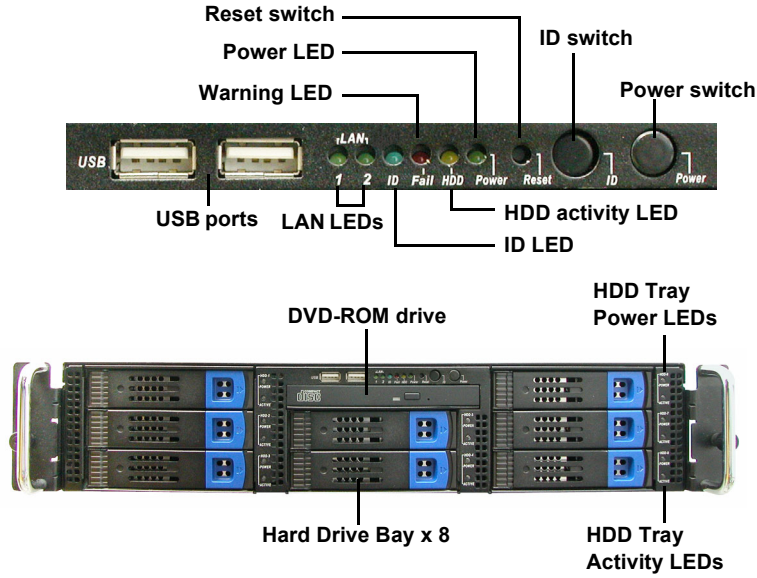
Sliding Rail

TYAN Logo

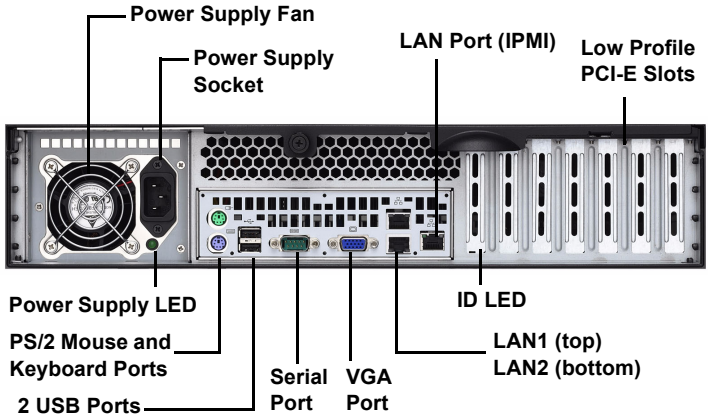
1.5 About the Product

The following views show you the product.

1.5.1 System Front View



1.5.2 System Rear View



Note: The above shows a single power supply setup (B5397T26W8H). A redundant power supply setup (B5397T26W6HR) is also available. In both cases, the output voltage is the same.

1.5.3 LED Definitions

Front Panel

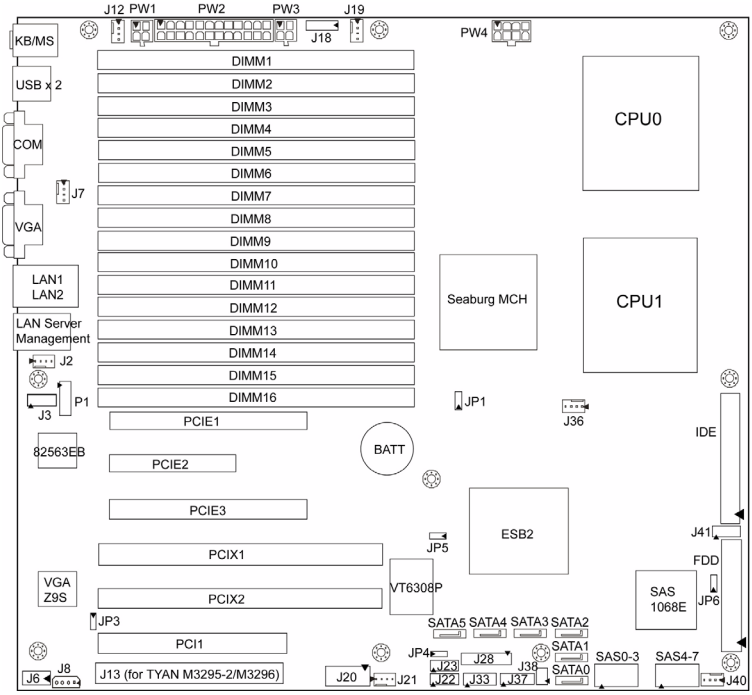
LED		Color	State	Description
Power		Green OFF	ON OFF	Power ON Power OFF
HDD Activity		Amber OFF	Blinking OFF	HDD/DVD-ROM access activity No disk activity
LAN1/LAN2/Linkage		Green Green OFF	ON Blinking OFF	LAN linked LAN accessing No LAN linked
Fail		Red OFF	ON OFF	System fails Abnormal power off Normal
Hot Swappable HDD Tray Power LED		Green OFF	ON OFF	Power connected Power disconnected
Hot Swappable HDD Tray Active LED	SAS HDD	Green Green OFF	ON Blinking OFF	HDD ready HDD access activity HDD not ready
	SATA HDD	Green OFF	Blinking OFF	HDD access activity No disk activity

Rear I/O LED

*Right or Left is viewed from the rear.

LED	Color	State	Description
LAN Linkage/ Activity (Left Side)	Green Green OFF	ON Blinking OFF	LAN linked LAN accessing No LAN linked
LAN Mode (Right Side)	Yellow Green OFF	ON ON OFF	1000Mb mode 100Mb mode 10Mb mode or No LAN linked
ID LED	Blue OFF	ON OFF	System is identified System is not identified
Zippy Power Supply LED	Green Green Amber Amber OFF	ON 1Hz Blinking ON 1Hz Blinking OFF	Output ON and OK AC present/Only 5Vsb ON Power supply critical event causing a shutdown: failure, OCP, OVP, fan fail Power supply warning event where the power supply continues to operate: high temp., high power, high current, slow fan No AC power

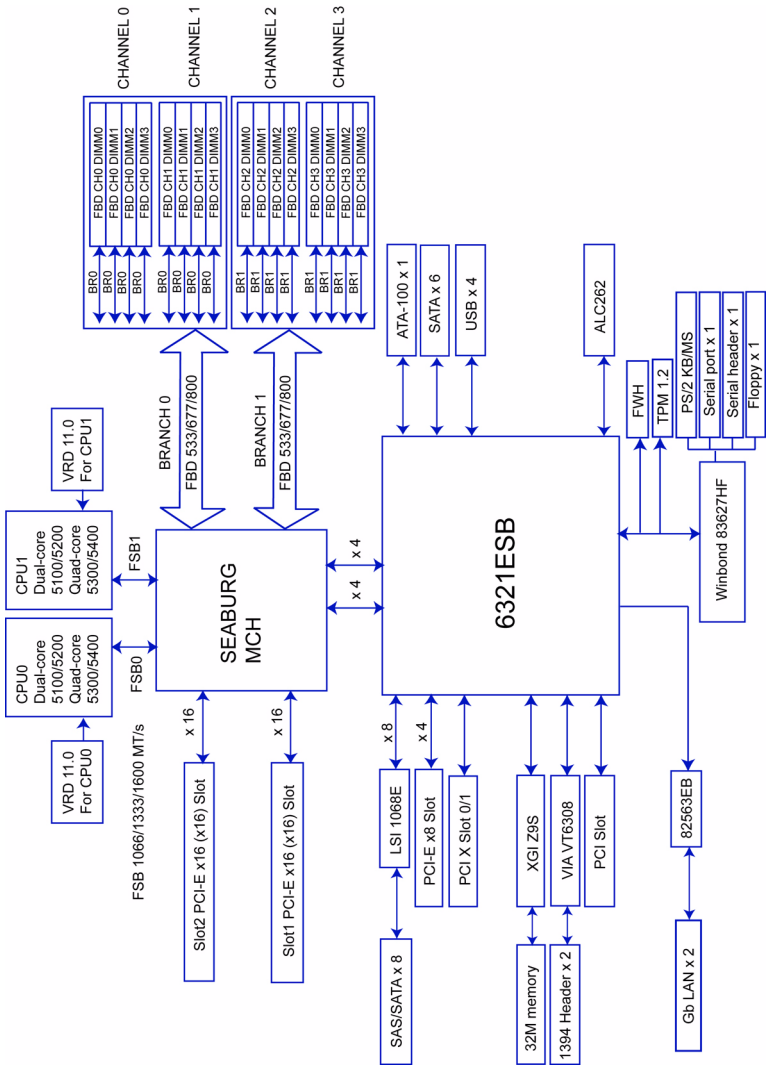
1.5.4 Motherboard Layout



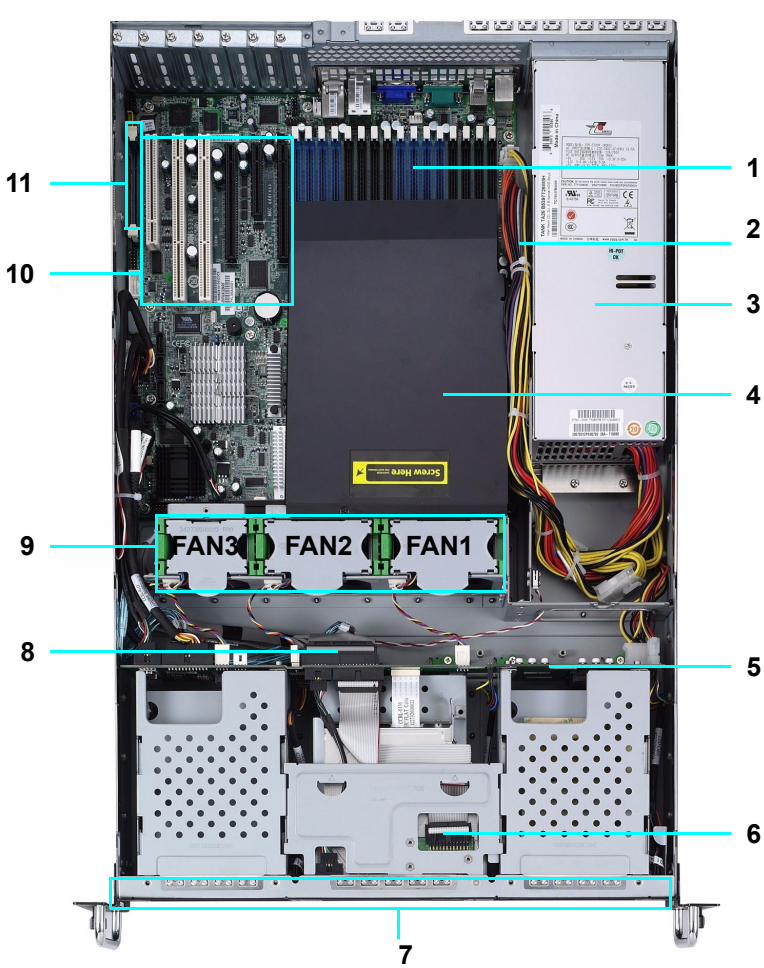
1.5.5 Jumpers & Connectors

Jumper/Connector	Function
J7/J12/J19/J21/ J36/J40	4-pin FAN connector
J3	Onboard HD Audio Header
J6	CD_IN Audio Header
J8	IPMB Header
J20	COM2 Header
J22/J23	1394 Header
J28	Front Panel Header
J33	TYAN Fan Speed Header for Barebone
J37	TYAN LAN LED Header for Barebone
J38	TYAN LCM Header for Barebone
J41	USB Front Panel Header
P1	Audio Jack Header
J2	Aux. Power Header for TYAN Riser Card (M2061)
JP1	Clear CMOS Jumper (Close 1-2) Default (Close 2-3) Clear CMOS
JP3	Onboard VGA Disable Jumper (Close 1-2) Default, enabled (Close 2-3) Disabled
JP4	Onboard 1394 Jumper (Close 1-2) Default, enabled (Close 2-3) Disabled
JP5	PCI-X Speed Select Jumper (Close 1-2) Default, 133MHz (Close 2-3) 100MHz
JP6	Onboard SAS Disable Jumper (Close 1-2) Default, enabled (Close 2-3) Disabled

1.5.6 System Block Diagram



1.5.7 Internal View



1. Memory Slots
2. Power Connector
3. Power Supply
4. Fan Duct
5. SAS / SATA Backplane
6. LED Control Board Cable
7. Eight (8) SAS / SATA HDD trays
8. DVD-ROM Cable
9. System Fans (Right to Left: FAN1, FAN2, FAN3)
10. Low Profile PCI-E Slots
11. SO-DIMM TARO Card Socket

Chapter 2: Setting Up

2.0.1 Before You Begin

This chapter explains how to install the CPU, CPU heatsink, memory modules, hard drives, and floppy drive. Instructions on inserting a PCI-E card are also given.

Take note of the precautions mentioned in this section when installing your system.

2.0.2 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers prevents them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

2.0.3 Tools

The following procedures require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

2.0.4 Precautions

Components and electronic circuit boards can be damaged by discharges of static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Tank TA26 B5397 or injury to yourself.

- Ground yourself properly before removing the top cover of the system. Unplug the power from the power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

2.1 Installing Motherboard Components

This section describes how to install components on to the motherboard, including CPU, memory modules and PCI-E card.

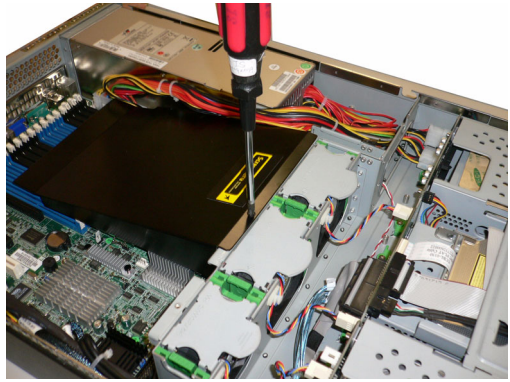
2.1.1 Removing the Chassis Cover

Follow these instructions to remove the Tank TA26 B5397 chassis cover.

1. Turn the screw on the back side. Then slide the chassis cover in the direction of arrow.

2. Lift off the cover.

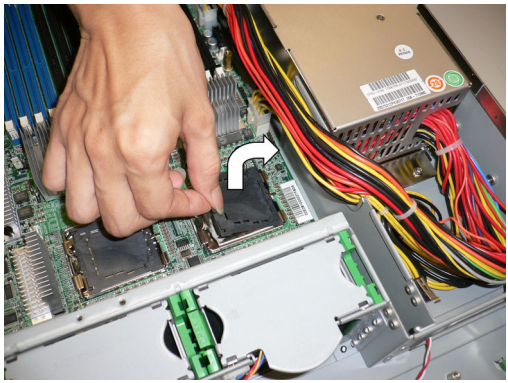
3. Unscrew the fan duct.



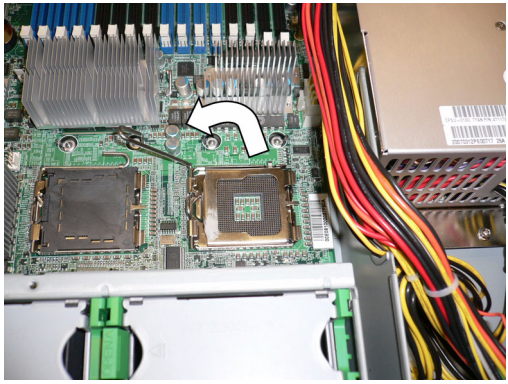
2.1.2 Installing the CPU

Follow these instructions to install the CPU.

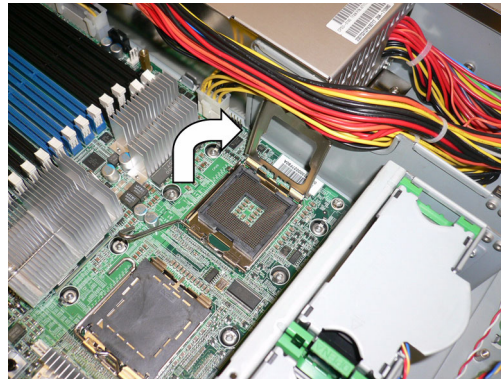
1. Remove the cover on the CPU socket.



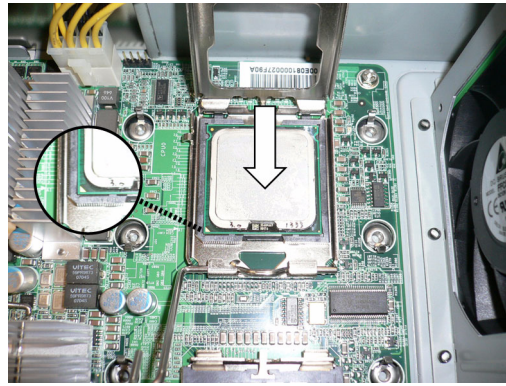
2. Lift up the CPU lever to unlock the socket.



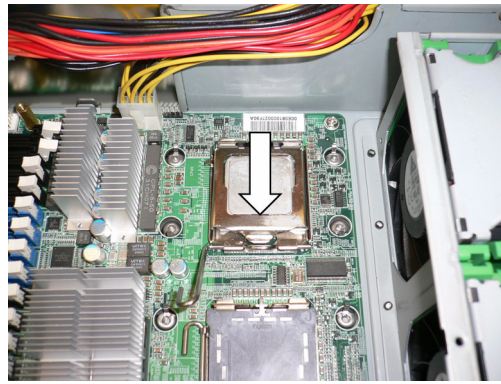
3. Open the socket in the direction as illustrated.

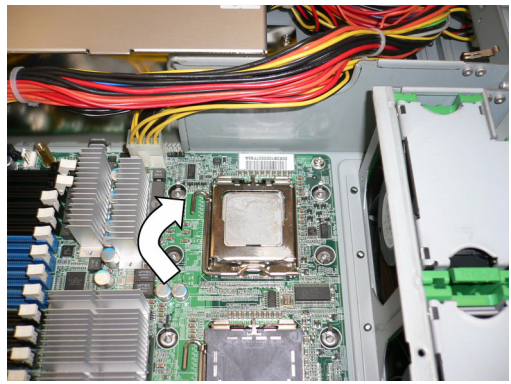


4. Place the CPU in the CPU socket, ensuring that pin 1 is located as shown below.

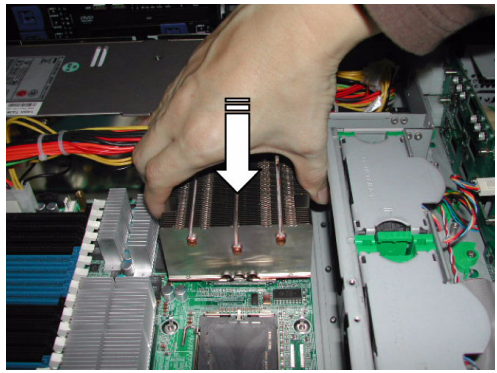


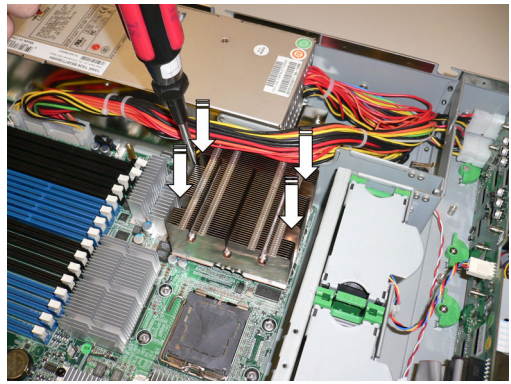
5. Close the cover and press the CPU socket lever down to secure the CPU.





6. Place theheatsink on top of the CPU and secure with four screws as shown below.

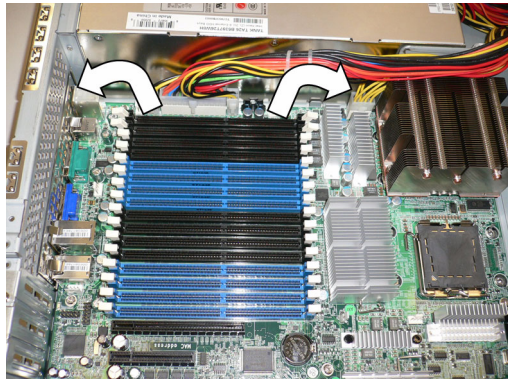




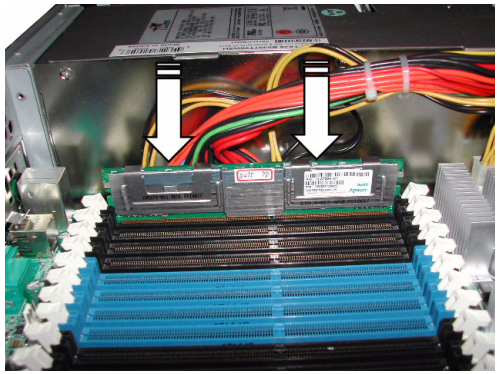
2.1.3 Installing the Memory

Follow these instructions to install the memory modules on the motherboard.

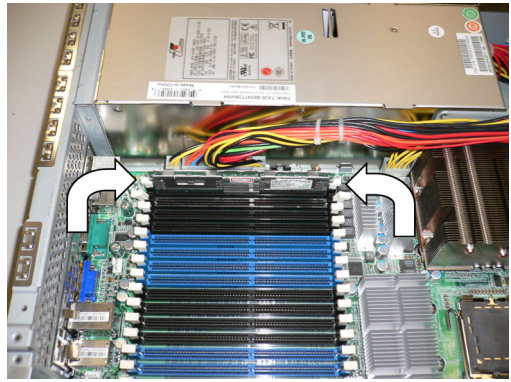
1. Locate the memory slots on the motherboard.
2. Press the memory slot locking levers in the direction of the arrows as shown below.



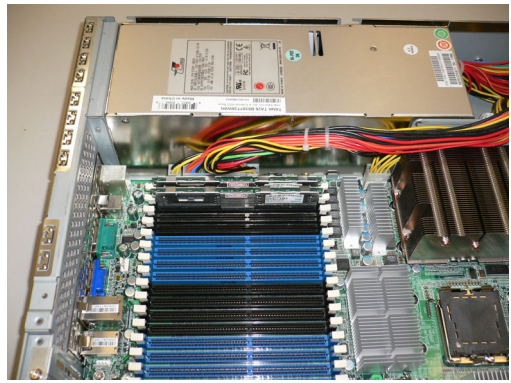
3. Insert the memory module into the slot as shown below.



4. When inserted properly, the memory slot locking levers lock automaticaly onto the indentations at the ends of the module.



5. Repeat these steps when installing a second memory module.



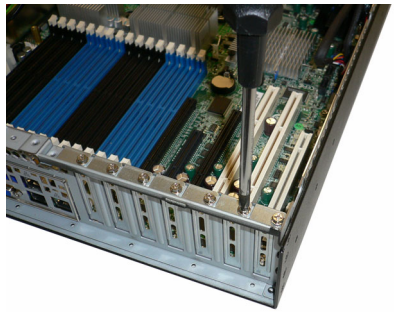
The following chart outlines the suggested rules for populating memory.

Total DIMM Quantity	BRANCH0								BRANCH1							
	CHANNEL0				CHANNEL1				CHANNEL0				CHANNEL1			
	DIMM1	DIMM2	DIMM3	DIMM4	DIMM5	DIMM6	DIMM7	DIMM8	DIMM9	DIMM10	DIMM11	DIMM12	DIMM13	DIMM14	DIMM15	DIMM16
1	x															
2	x								x							
4	x				x				x				x			
8	x	x			x	x			x	x			x	x		
12	x	x	x		x	x	x		x	x	x		x	x	x	
16	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

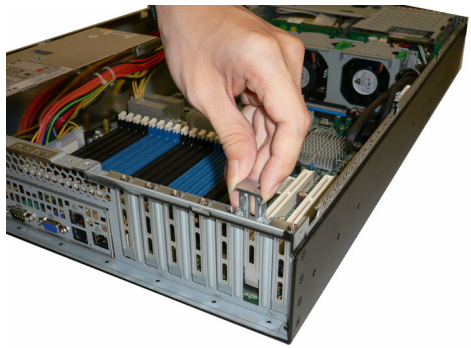
2.1.4 Installing Low Profile PCI-E Cards

There are two PCI-E card slots in your TA26 B5397 system. Follow these instructions for PCI-E card installation.

1. Locate the PCI-E card slots on the motherboard. See “System Internal View” on page 14 for the PCI-E slot locations.
2. Unscrew the bracket from the slot you want to use.



3. Lift up the bracket.



4. Insert a PCI-E card with low profile bracket into the appropriate slot. Secure the card with the screw you removed from the bracket.

2.1.5 Installing Hard Drives

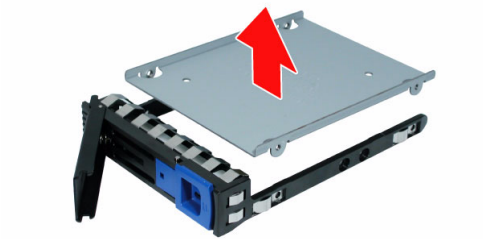
The TA26 B5397 supports up to eight serial SAS/SATA hard drives. Follow these instructions to install a hard drive.

1. Press the locking lever latch in the direction shown by the arrow below. The latch will pop open.

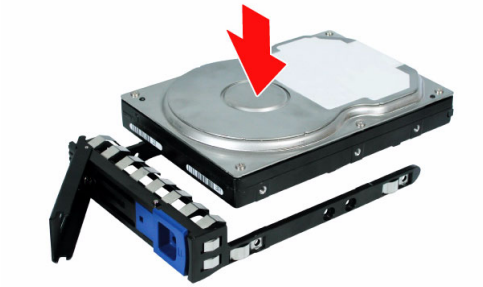
2. Slide the HDD tray out.

3. Unscrew the tray from the base as shown.

4. Remove the base.

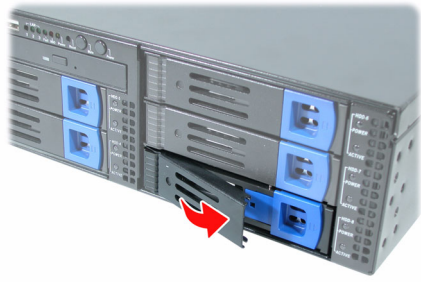


5. Place a hard drive into the drive tray.



6. Screw the hard drive in place using 4 HDD screws.

7. Reinsert the tray into the bay and press the locking lever to secure.

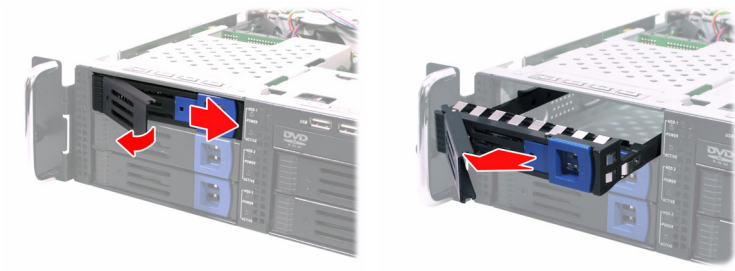


2.1.6 Installing a Floppy Drive

This section describes how to install a floppy disk drive in the TA26 B5397 if required.

Follow these instructions to install a floppy disk drive in the TA26 B5397.

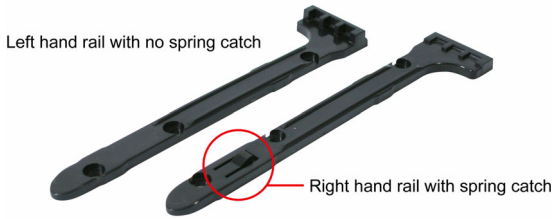
1. Remove the top, left hand drive tray from the TA26 B5397 as shown.



Note: The top, left hand drive bay is the only bay that can accommodate a floppy disk drive.

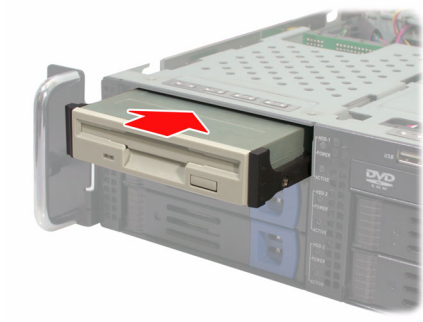
2. Attach the supplied FDD rails to the floppy disk drive with six (6) M3L5, BIN (+) screws. The wide end of the rails should be pointing towards the front.

Note: The FDD rails each have a flat side which should be against the body of the floppy drive when installed. There is also a spring catch mechanism on the right hand rail (when looking at the floppy disk drive from the front).

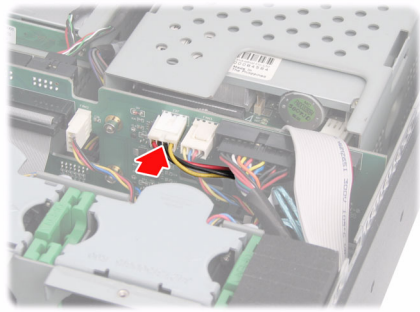


3. Plug the FDD power and data cables into the ports on the back of the floppy disk drive.

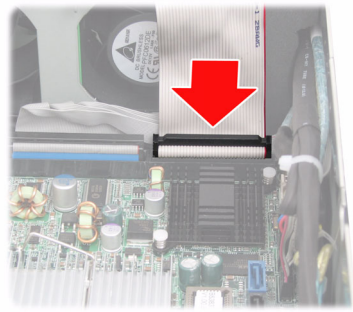
4. Thread the cables out through the back of the empty drive bay. Slide the floppy disk drive into the drive bay until it clicks into place and fits flush with the front panel.



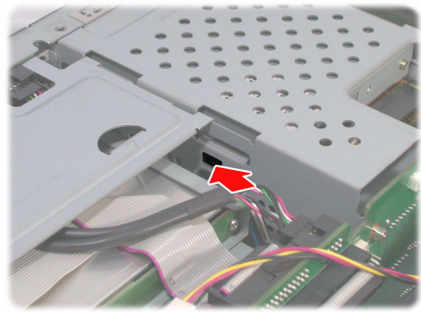
5. Connect the other end of the power cable to the connector (J37) on the backplane.



6. Connect the other end of the supplied FDD cable to the FDD slot on the motherboard.



Note: To release the floppy disk drive from the drive bay, you will need to press the release catch inside the chassis.



2.2 Rack Mounting

After installing the necessary components, the Tank TA26 B5397 can be mounted in a rack using the supplied rack mounting kit.

Rack mounting kit

Sliding Rails x 2

Mounting Ears x 2

Screws Kit x 1

Mounting Brackets x 4 (pre-installed)

2.2.1 Installing the Server in a Rack

Follow these instructions to mount the TA26 B5397 into an industry standard 19" rack.

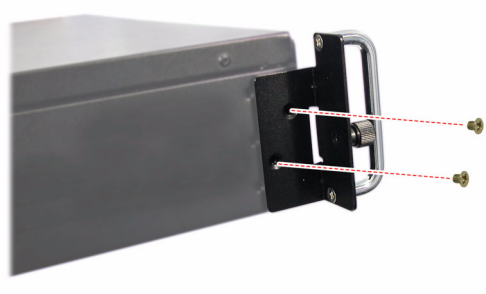
NOTE: Before mounting the Tank TA26 B5397 in a rack, ensure that all internal components have been installed and that the unit has been fully tested. Maintenance can be performed on the unit while in a rack but it is preferable to install the device in a fully operational condition.

Screws List

No.	Screw	Size	Quantity
A		M4L6, S10C (marked blue)	4
B		M6	8
C		M4-L5	18

Attaching the Inner Rails to the Unit

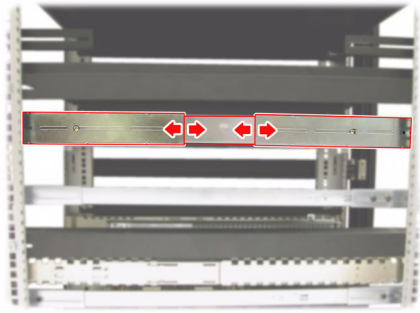
7. Screw the handles to each side of TA26 B5397 as shown using two (2) M4L6, S10C screws (A) from the supplied screws kit.



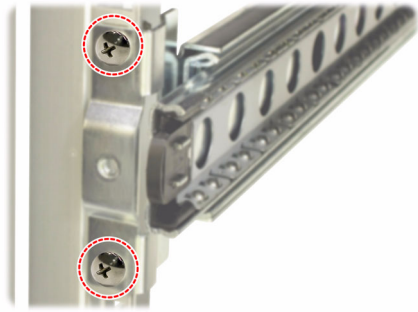
8. Attach the inner rails both sides of the unit using nine (9) M4-L5 screws (C) on each side.

Installing Outer Rails to the Rack

1. Adjust the outer rail to match the length of the unit.

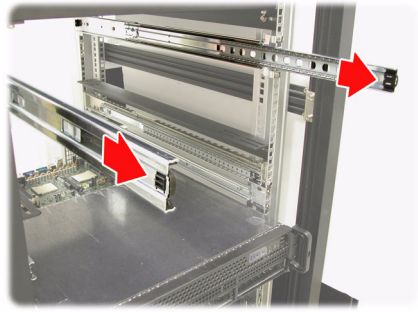


2. Secure the outer rail to the rack using 2 brackets and M6 screws (B) for each side. Secure the mounting brackets from outside, not inside, of the rack.

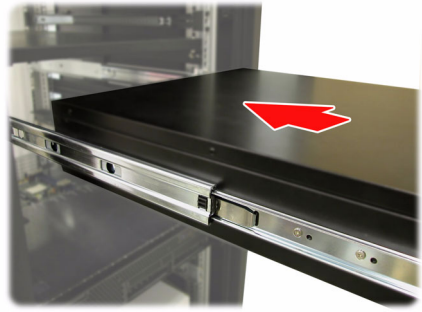


Rackmounting the Server

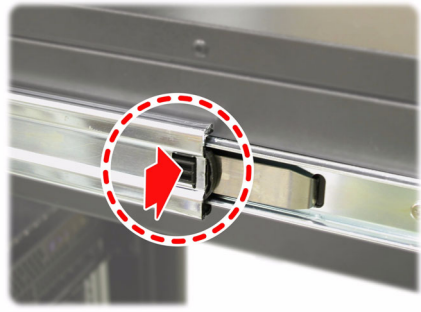
1. Draw out the middle rail to the latch position.



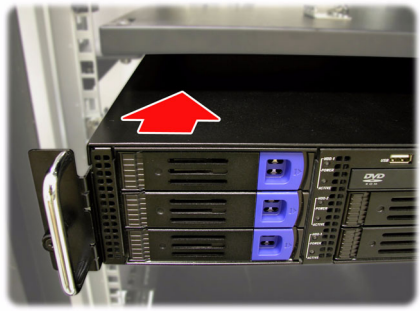
2. Lift the unit and then insert the inner slide rails into the middle rails.



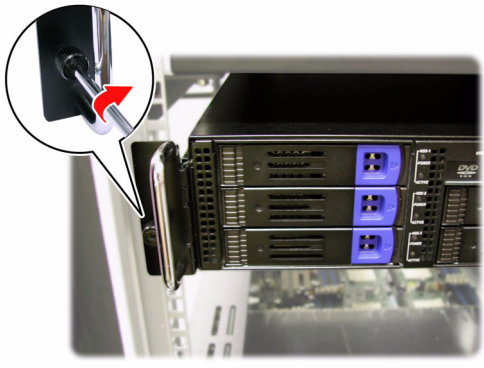
3. Push the unit in and press the latch key.



4. Push the whole system into the rack.



5. Secure the mounting handles of the unit to the rack.



Note: To avoid injury, it is strongly recommended that two people lift the TA26 B5397 into the place while a third person screws it to the rack.

NOTE

Chapter 3: Replacing Pre-Installed Components

3.1 Introduction

This chapter explains how to replace pre installed components including the motherboard, LED control board, USB adapter board, HDD, and DVD-ROM drive, etc.

Take note of the precautions in this section when installing your system.

3.1.1 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers keeps them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

3.1.2 Tools

The procedures that follow require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

3.1.3 Precautions

Components and electronic circuit boards can be damaged by static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Tank TA26 B5397 or injury to yourself.

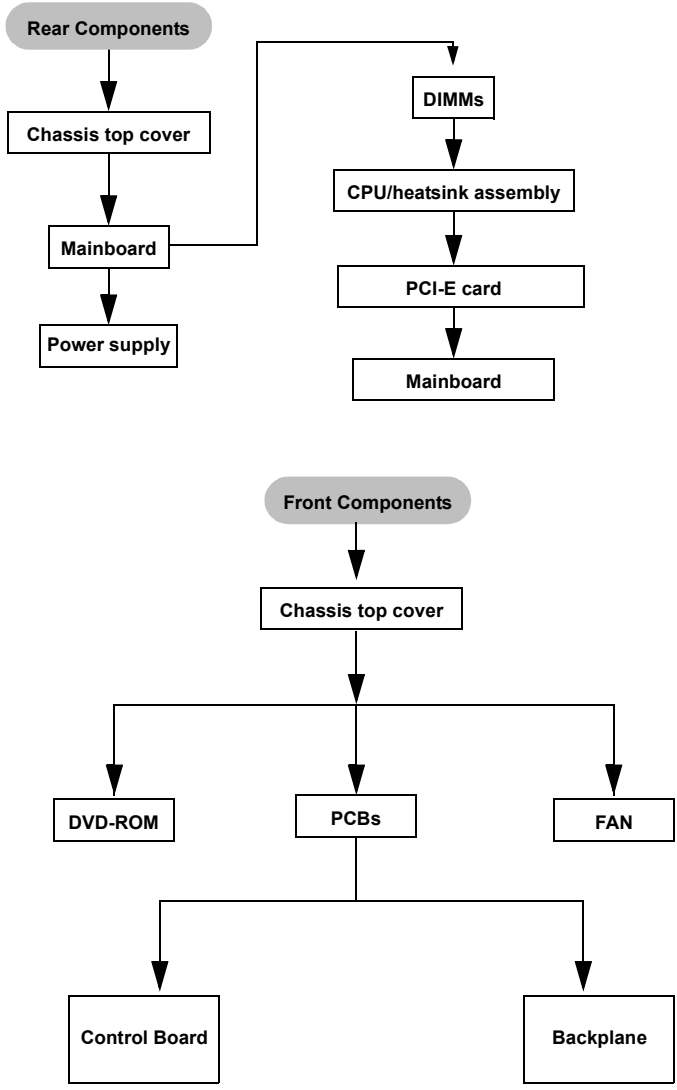
- Ground yourself properly before removing the top cover of the system. Unplug the power from your computer power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

3.2 Disassembly Flowchart

The following flowchart outlines the disassembly procedure.



Note: The Tank TA26 B5397 should be always powered off before disassembly.

3.3 Removing the Cover

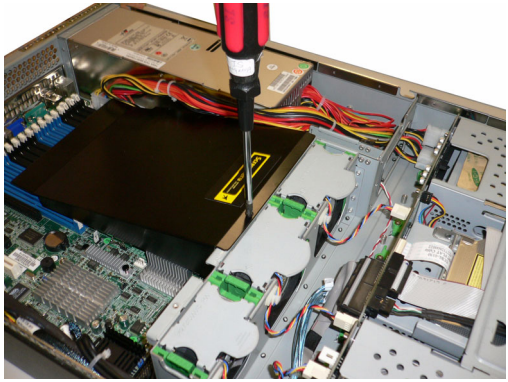
Before replacing any parts you must remove the chassis cover.

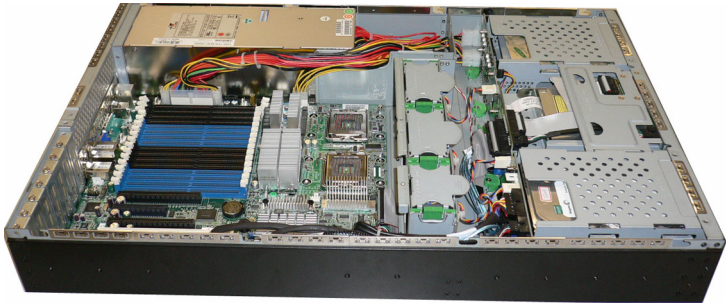
Follow these instructions to remove the cover of the Tank TA26 B5397 chassis cover.

1. Turn the screw on the back side. Then slide the chassis cover in the direction of arrow.

2. Lift off the cover.

3. Unscrew the fan duct.





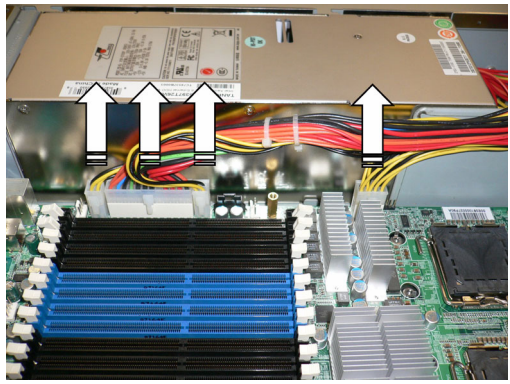
3.4 Replacing Motherboard Components

Follow these instructions to replace motherboard components, including the motherboard.

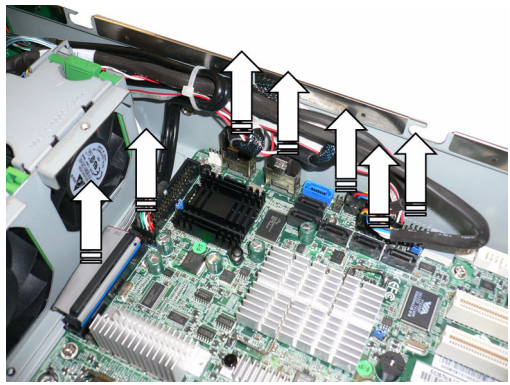
3.4.1 Disconnecting All Motherboard Cables

Before replacing the motherboard or certain components, remove cables connected to the motherboard. Follow these instructions to remove all motherboard cabling.

1. Disconnect power cables.



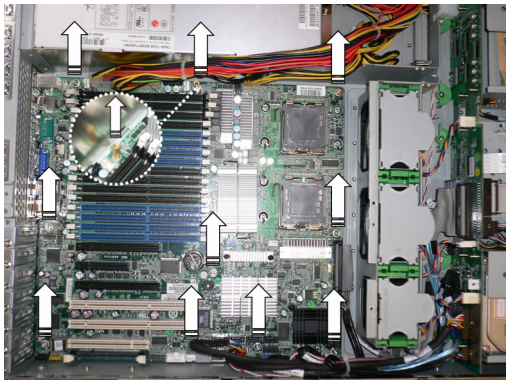
2. Disconnect the DVD-ROM drive cable, TYFP cables, SAS/SATA hard drive cables, USB cable, and 2x7 pin fan control cable.



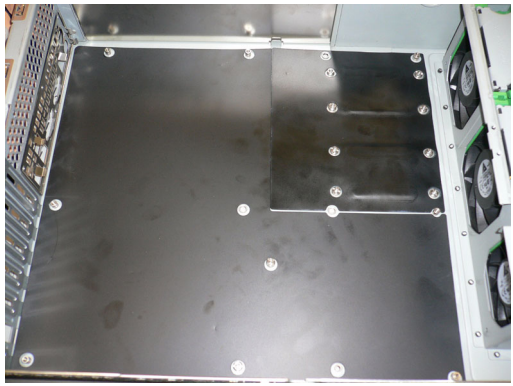
3.4.2 Removing the Motherboard

After removing all of the aforementioned cables, follow these instructions to remove the motherboard from the chassis.

1. Remove ten mainboard screws and one fan duct screw securing the motherboard to the chassis.



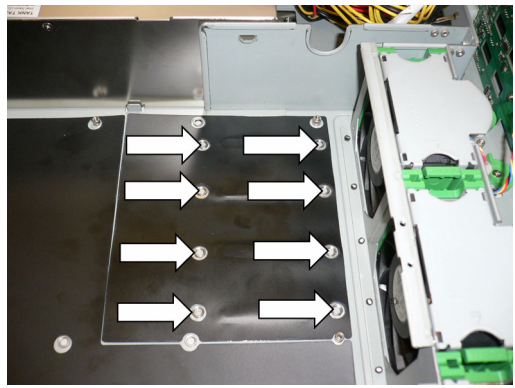
2. Remove the mainboard from the chassis.



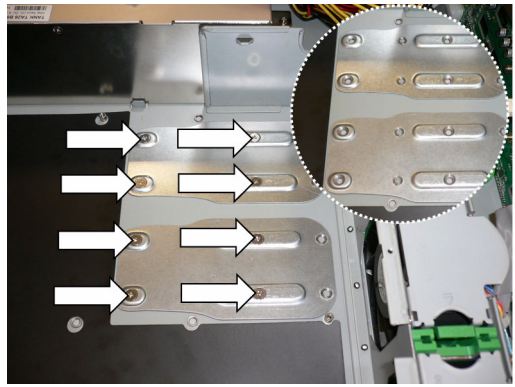
3.4.3 Removing the CPU Heatsink Mounting Plates

Follow these instructions to remove the CPU Heasink mounting plates.

1. Remove the eight CPU Heatsink mounting plate stand-offs. They are the stand-offs to which you mount the CPU heatsink.



2. Take out the black mylar from the chassis.
3. Unscrew the eight chassis mounting stand-offs to remove the CPU Heatsink mounting plates from the chassis.



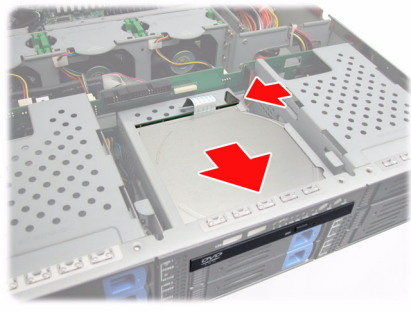
4. Refer to ***2.5 Installing the Processor(s): CPU Heatsink Mounting Plate Installation*** on your motherboard's User's Guide for more information.

3.5 Replacing the Slim DVD-ROM

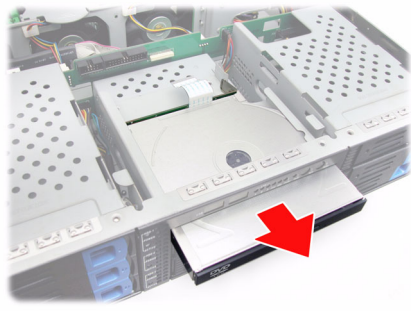
Follow these instructions to replace the DVD-ROM.

1. Remove the FFC cable from the rear of the DVD-ROM drive.

2. Press the tab in the direction shown to release the DVD-ROM drive.



3. Push the DVD-ROM drive through the front of the TA26 B5397.



4. Remove the two screws that secure DVD-ROM drive to the backplane.

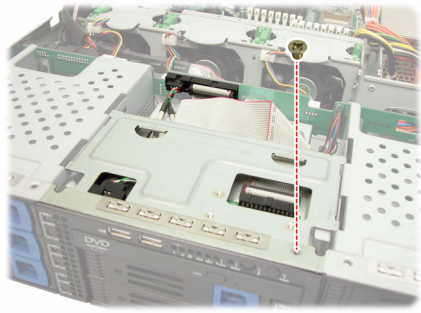
5. Replace the DVD-ROM drive.

6. Secure the DVD-ROM to the backplane using two screws. Then replace the unit into the drive bay and connect the DVD-ROM FFC cable.

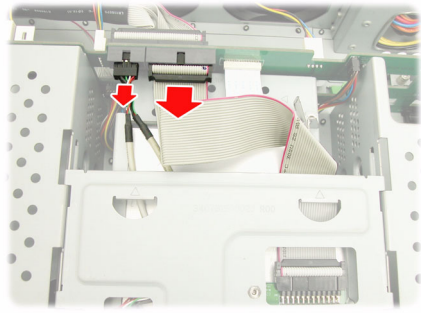
3.6 Replacing the LED Control Board

Follow these instructions to replace the LED control board.

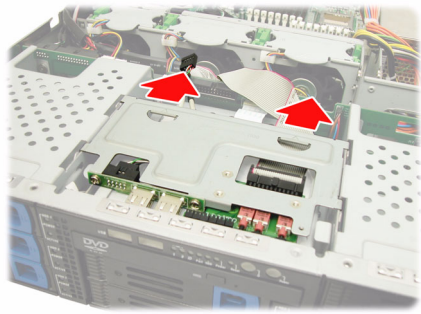
1. Remove the screw securing the LED control board unit to the chassis.



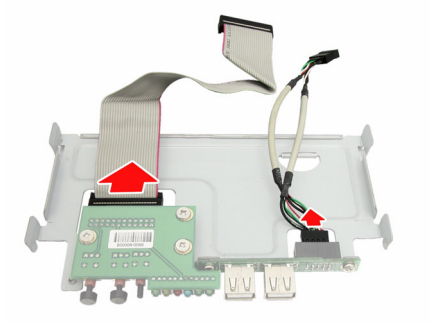
2. Remove the connector cables from the backplane.



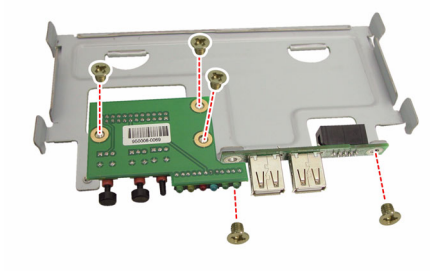
3. Slide back the LED control board bracket and lift free of the chassis.



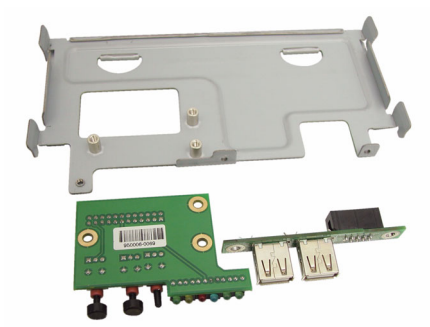
4. Remove the LED control board and USB cables from the LED control board and USB adapter board.



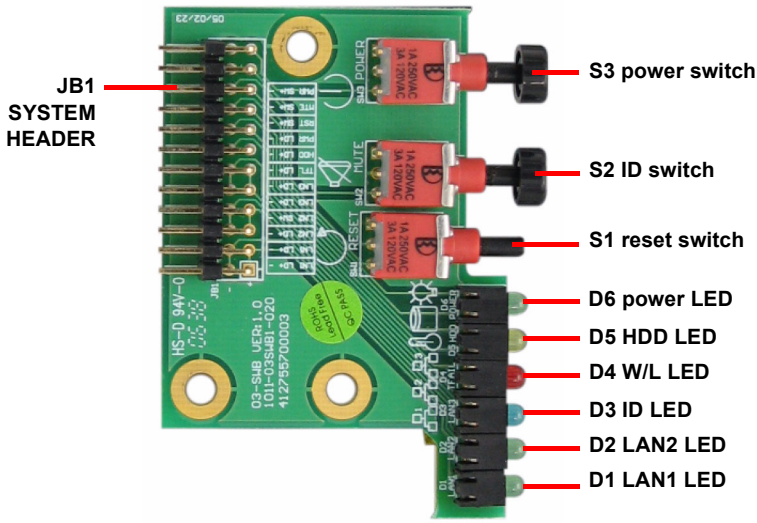
5. Remove the five screws securing the LED control board and USB adapter board to the bracket.



6. Release the LED control board and USB adapter board from bracket. After replacement, insert and secure the unit to the chassis following the above procedure in reverse.



3.6.1 LED Control Board Features



3.6.2 LED Control Board Connector Pin Definitions

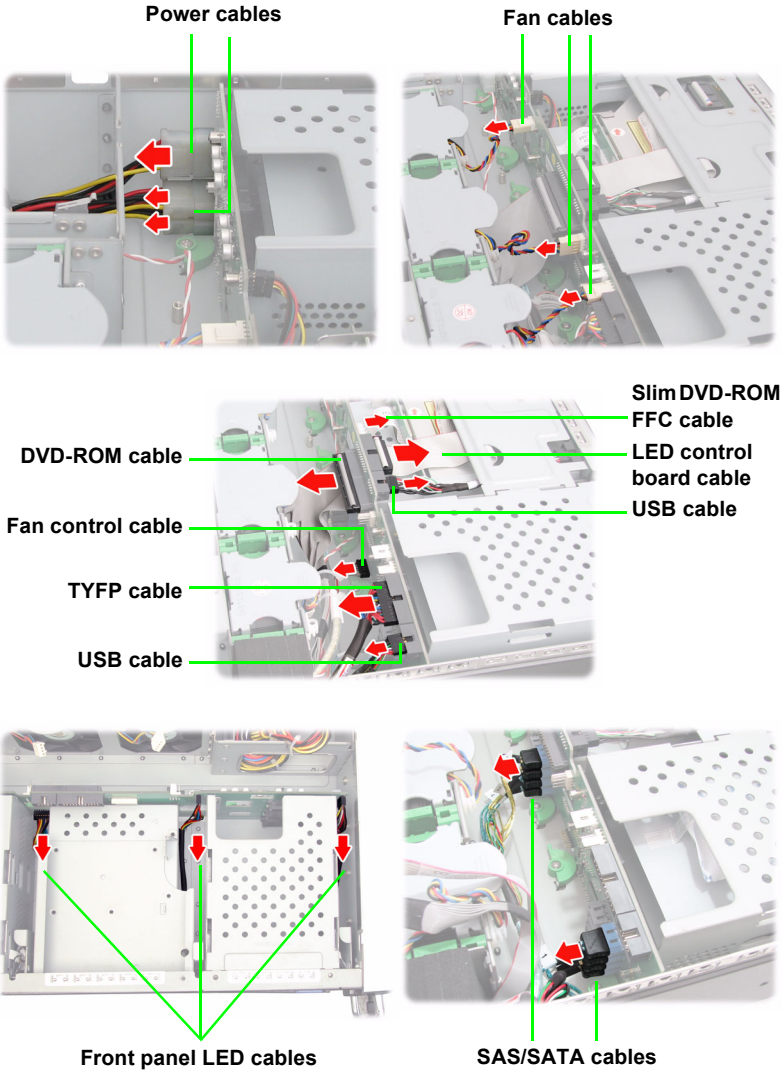
JB1 2x12 Pin Output Connector

1	LAN1 GR-LED +	2	LAN1-LED -
3	Reserved	4	Reserved
5	LAN2 GR-LED +	6	LAN2-LED -
7	Reserved	8	Reserved
9	Reserved	10	Reserved
11	ID-LED +	12	ID-LED -
13	W-LED +	14	W-LED -
15	Local HDD led +	16	Local HDD led -
17	System power led +	18	System power led -
19	System reset switch +	20	System reset switch -
21	ID-switch +	22	ID-switch -
23	System power switch +	24	System power switch -

3.7 Replacing the Backplane

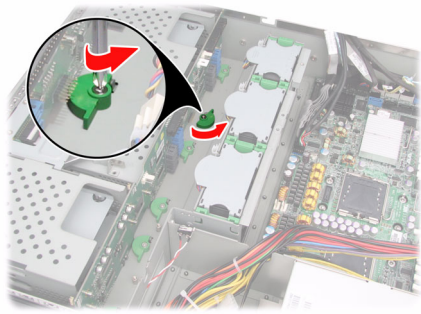
Follow these instructions to replace the backplane in your TA26 B5397 system.

1. Remove all of cables connected to the backplane, including fan cables, DVD-ROM cables, LED control board cable, fan control cable, TYFP cable, USB cables, front panel LED cables, power cables, and SAS/SATA cables.

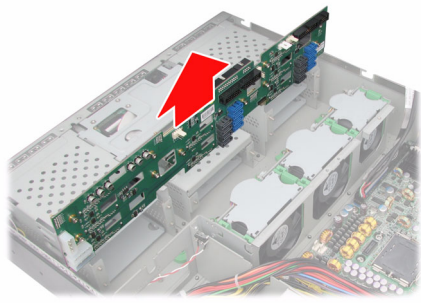


2. Remove the ten screws to release the backplane.

3. Turn the locking keys at the base of the backplane as shown.



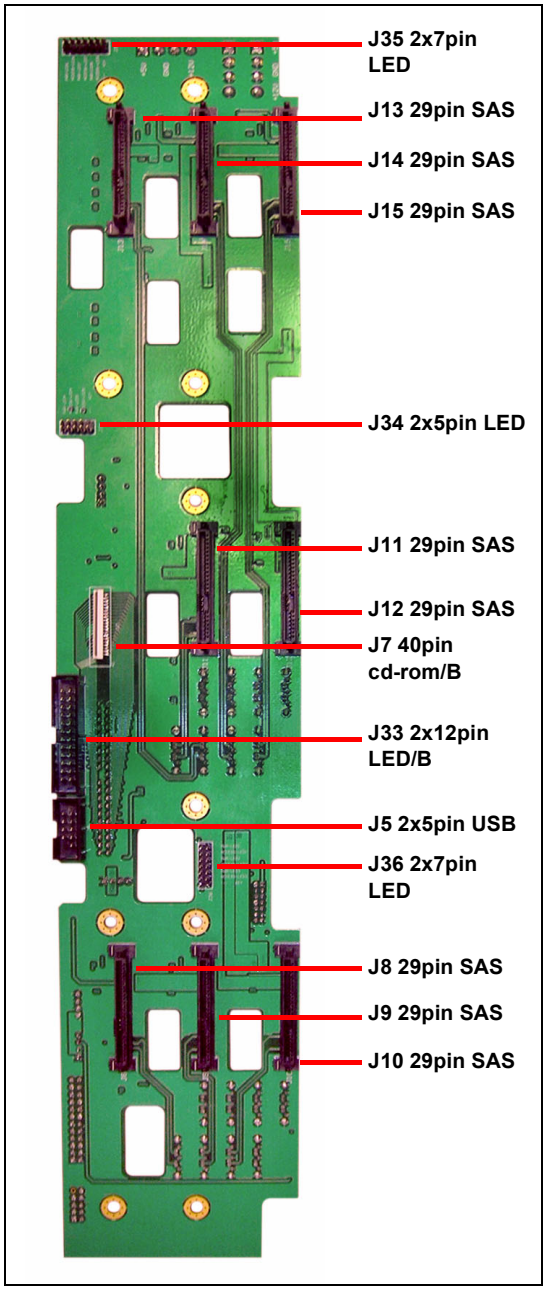
4. Pull out the backplane.



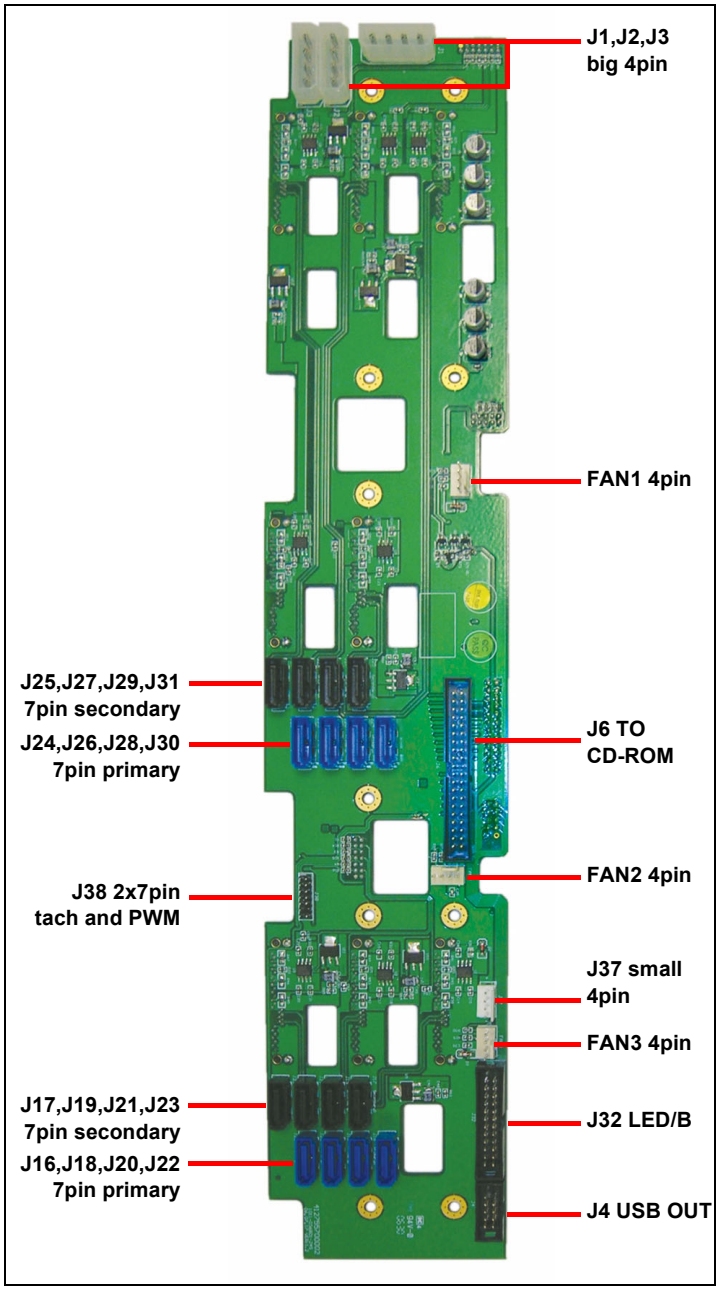
5. Place a new backplane in position and secure in place with the ten screws and locking keys released in step 2 and 3.
6. Reconnect all the cables to the backplane.

3.7.1 M1220 SAS/SATA Backplane Features

Front View



Rear View


J1,J2,J3
big 4pin
FAN1 4pin
J25,J27,J29,J31
7pin secondary
J24,J26,J28,J30
7pin primary
J6 TO
CD-ROM
FAN2 4pin
J38 2x7pin
tach and PWM
J37 small
4pin
FAN3 4pin
J17,J19,J21,J23
7pin secondary
J16,J18,J20,J22
7pin primary
J32 LED/B
J4 USB OUT

3.7.2 M1220 SAS/SATA Backplane Connector Pin Definitions

J32, J33 2x12pin LED board connector

1	LAN1 LED + (link/active)	2	LAN1 LED - (link/active)
3	Reserved	4	Reserved
5	LAN2 LED + (link/active)	6	LAN2 LED - (link/active)
7	Reserved	8	Reserved
9	Reserved	10	Reserved
11	ID-LED +	12	ID-LED -
13	W-LED +	14	W-LED -
15	M/B HDD LED +	16	M/B HDD LED -
17	M/B power LED +	18	M/B power LED -
19	M/B reset switch +	20	M/B reset switch -
21	ID-switch +	22	ID-switch -
23	M/B power switch +	24	M/B power switch -

J7 SILM IDE 40pin Front Panel Connector

1	RESET	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	VCC
21	DMARQ	22	VCC
23	DIOW	24	VCC

25	DIOR	26	VCC
27	IORDY	28	CSEL
29	DMACK	30	VCC
31	INTRQ	32	IOCS16
33	DA1	34	PDIAG
35	DA0	36	DA2
37	CS1FX	38	CS3FX
39	DASP	40	VCC

Fan Signal Related Connector Pin Definitions

Note: The FAN signal naming is based on HW circuit design only. It might be different from the system fan name.

FAN1, FAN2, FAN3: 4-pin Fan connector

1	GND
2	VDD +12V
3	TACH
4	PWM

J1, J2 and J3 power big 4-pin connector

1	VDD +12V
2	GND
3	GND
4	VCC +5V

J4, J5 USB 2x5pin connector

1	USB1 power +	2	USB2 power +
3	USB1 DATA -	4	USB2 DATA -
5	USB1 DATA +	6	USB2 DATA +
7	USB1 GND	8	USB2 GND
9	Key pin	10	None

J37 power small 4-pin connector

1	+5V
2	GND
3	GND
4	+12V

J36 HDD LED pin out

1	PLED1	2	GND
3	ALED1	4	ALED1 +
5	PLED2 +	6	GND
7	ALED2 -	8	ALED2 +
9	PLED3 +	10	GND
11	ALED3 -	12	ALED3+
13	None	14	Key

J34 HDD LED pin out

1	PLED4 +	2	GND
3	ALED4 -	4	ALED4 +
5	PLED5 +	6	GND
7	ALED5 -	8	ALED5 +
9	None	10	Key

J35 HDD LED pin out

1	PLED6 +	2	GND
3	ALED6 -	4	ALED6 +
5	PLED7 +	6	GND
7	ALED7 -	8	ALED7 +
9	PLED8 +	10	GND
11	ALED8 -	12	ALED8 +
13	None	14	Key

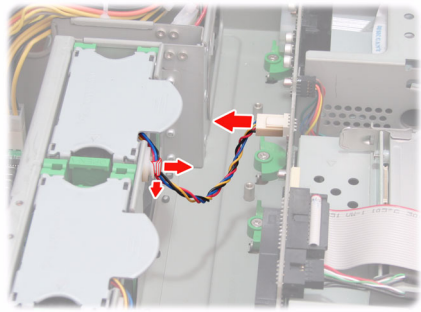
J38 2x7pin FAN tach and PWM pin out

1	FAN1 tach	2	Reserved
3	FAN2 tach	4	Reserved
5	FAN3 tach	6	Reserved
7	Reserved	8	Reserved
9	Reserved	10	Reserved
11	GND	12	KEY
13	GND	14	PWM input

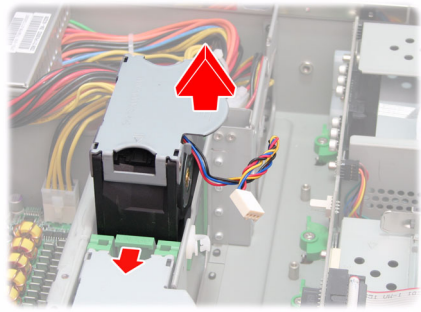
3.8 Replacing the System Fan

Follow these instructions to replace the cooling fans in your TA26 B5397 system.

1. Locate the fan connector on the backplane and unplug the fan cable as shown below.



2. Take the fan away from the chassis.



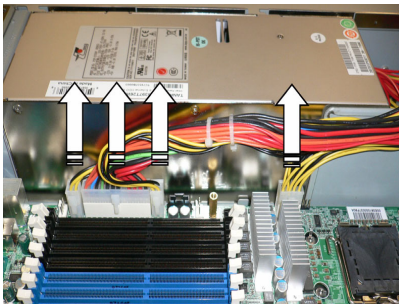
3. Replace a new fan into the chassis following the above steps in reverse.

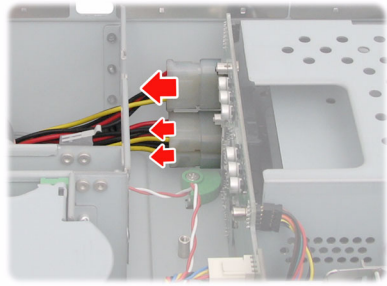
3.9 Replacing the Power Supply

3.9.1 Standatd Power Supply

Follow these instructions to replace the power supply in your TA26-B5397 system.

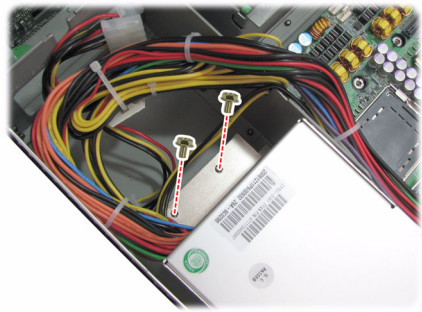
1. Remove the chassis cover. See “Removing the Cover” on page 38 for more details.
2. Detach the power cables from the motherboard and backplane. See “Disconnecting All Motherboard Cables” on page 40 for more details.



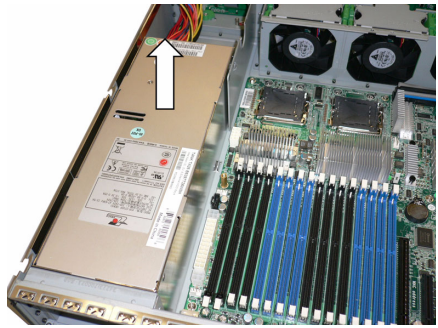


3. Remove the three screws securing the power supply to the chassis.

4. Remove the two screws attaching the power supply to the chassis interior and lift out the unit.



5. Lift the power supply free from the chassis.



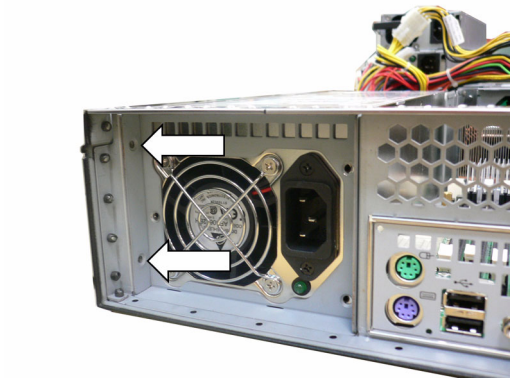
6. Replace a new power supply into the chassis following the above steps in reverse.

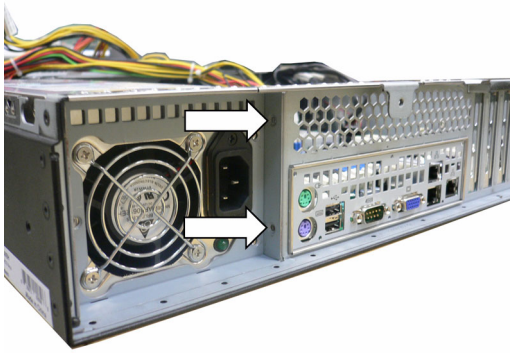
3.9.2 Optional 1+1 Redundant Power Supply

If the optional 1+1 redundant power supply is fitted, either of the two units can be hot swapped. Follow these instructions to replace a single power unit with a redundant power supply unit.

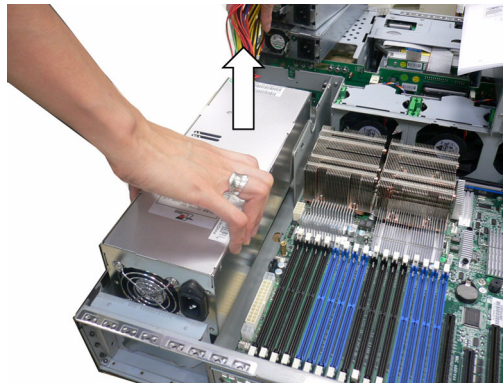
Note: Before proceeding, remove the new redundant power supply from its packaging.

1. Remove the screws which fix the bracket to the sides of the single power supply cage.

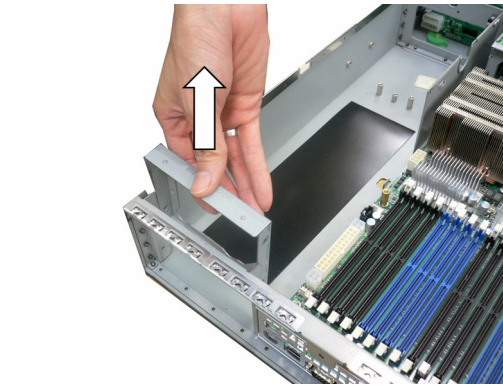




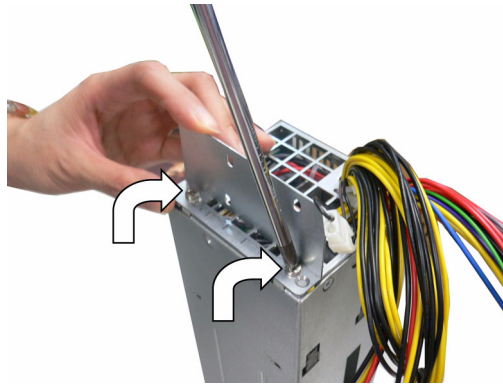
2. Lift the power supply free from the chassis.



3. Lift the bracket free from the chassis.

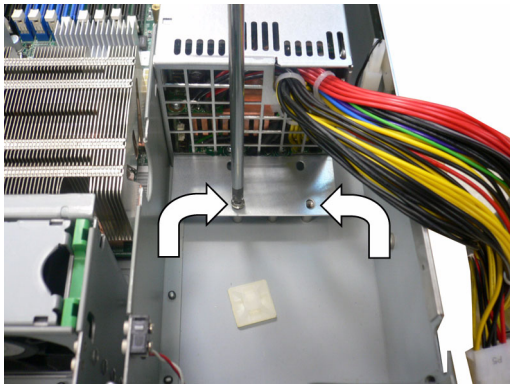


4. Screw the bracket to the rear of the redundant power supply cage.

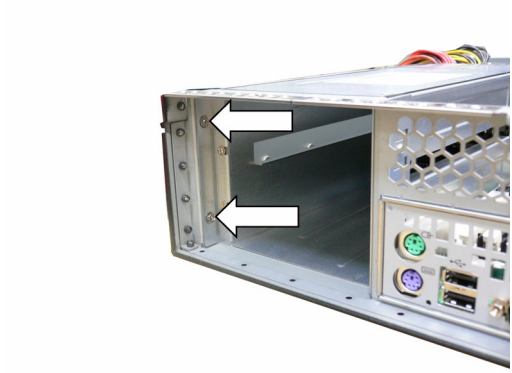


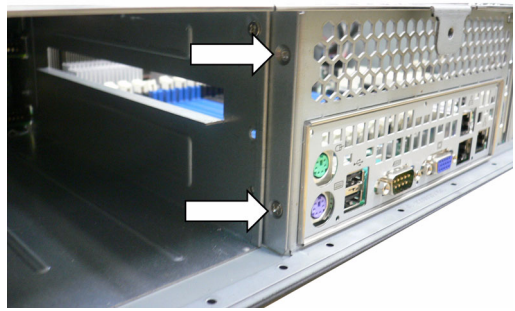
5. Insert the redundant power supply cage into the chassis.

6. Screw the cage to the chassis exterior.

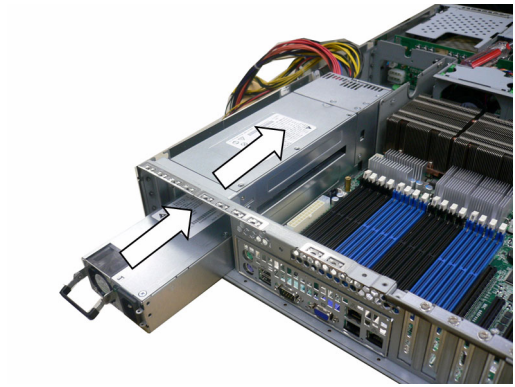


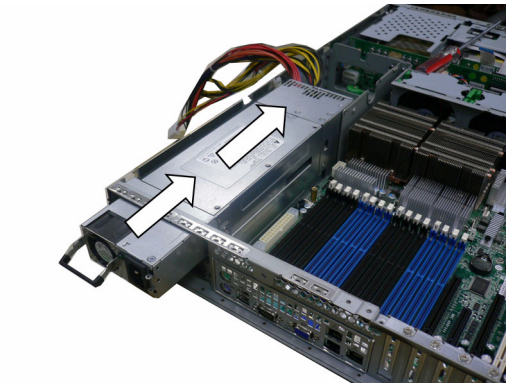
7. Screw the cage to the chassis interior.

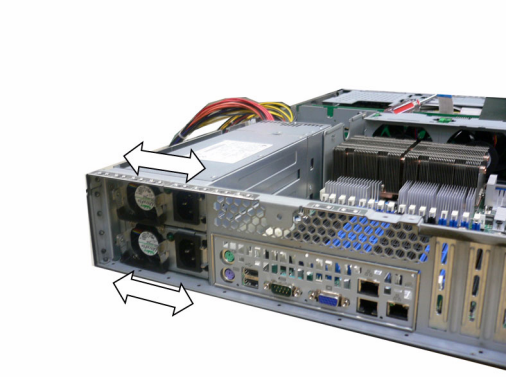




8. Insert the new power supply unit and secure by turning the locking screw.







9. Reattach all power supply connector cables to the motherboard and backplane.

NOTE

Appendix I: BIOS Differences

The BIOS of B5397 is similar to the BIOS of S5397. There is only one menu different. See the following for the differences in BIOS between B5397 and S5397. For a complete review of S5397 BIOS, refer to the motherboard manual.

Table of Differences

	S5397 Mainboard	B5397 Barebone
Advanced		
Hardware Monitor --> Fan Speed Monitoring	CPU0 CPU1 Rear Chass FAN Front Chass FAN PCI FAN System FAN	System Fan1 System Fan2 System Fan3
	Auto Fan Control [Disabled]	Auto Fan Control [Enabled]
Integrated Devices	Azalia Audio [Enabled]	Azalia Audio [Disabled]
	Onboard LSI SAS ROM [Disabled]	Onboard LSI SAS ROM [Enabled]

Appendix II: Cable Connection Tables

SAS/SATA Cable

Table 1: TA26 B5397 Model

M1220 SAS/SATA Backplane	Connects to	Motherboard
J16	→	mini SAS0~3
J18		
J20		
J22		
J24	→	mini SAS4~7
J26		
J28		
J30		

FAN Cable

Table 2: System Fan to Backplane

System Fan	Connects to	M1220 SAS/SATA Backplane
Fan 1	→	FAN1 4-pin connector
Fan 2	→	FAN2 4-pin connector
Fan 3	→	FAN3 4-pin connector

Power Supply Cable

Table 3: Power Supply to Motherboard

Power Supply	Connects to	Motherboard
P24 24-pin power cable	→	PW2 24-pin connector
PA 8-pin power cable	→	PW4 8-pin connector
PB 4-pin power cable	→	PW1 4-pin connector
PC 4-pin power cable	→	PW3 4-pin connector

Table 4: Power Supply to Backplane

Power Supply	Connects to	M1220 SAS/SATA Backplane
PD 4-pin power cable	→	J1 4-pin connector
PE 4-pin power cable	→	J2 4-pin connector
PF 4-pin power cable	→	J3 4-pin connector

Other Cables

Table 5: Backplane to Motherboard

M1220 SAS/SATA Backplane	Connects to	Motherboard
J32 LED/B	→	J28
		J37
J4 USB OUT	→	J41
J6 TO CD-ROM	→	IDE1
J38 2x7pin Tach and PWM	→	J33

Table 6: Backplane to LED Control Board

M1220 SAS/SATA Backplane (Rear side)	Connects to	LED Control Board
J33 2x12pin LED/B	→	JB1 SYSTEM HEADER
J5 2x5pin USB		

Table 7: System Internal LED Cables to Backplane

M1220 SAS/SATA Backplane (Front side)	Connects to	TA26 B5397 System
J34 2x5pin LED	→	System Internal LED Cables
J35 2x7pin LED		
J36 2x7pin LED		

Table 8: DVD-ROM Related Cable

M1220 SAS/SATA Backplane	Connects to	DVD-ROM Backplane
J7 slim DVD connector	→	DVD-ROM Backplane

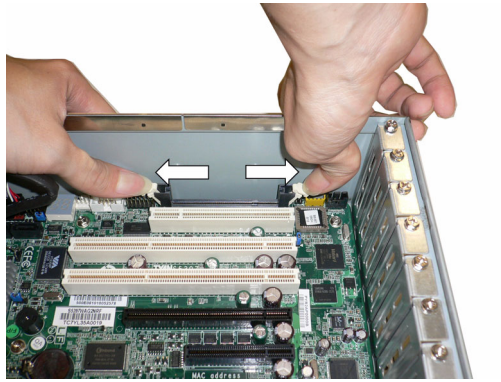
Table 9: FDD Related Cables

Motherboard FDD connector	→	FDD Drive
M1220 SAS/SATA Backplane J37 4-pin connector	→	FDD Drive

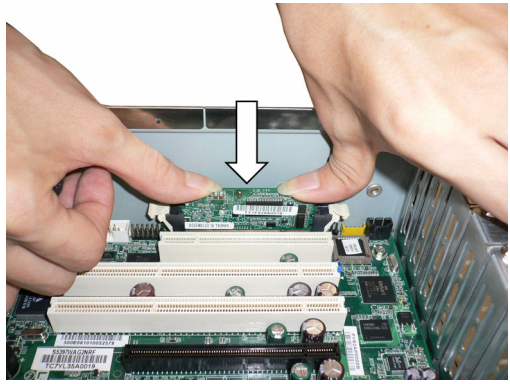
Appendix III: Installing the SO-DIMM Card

The following provides you with the information on installing the M3295-2/M3296 SMDC card into your TA26 B5397 system.

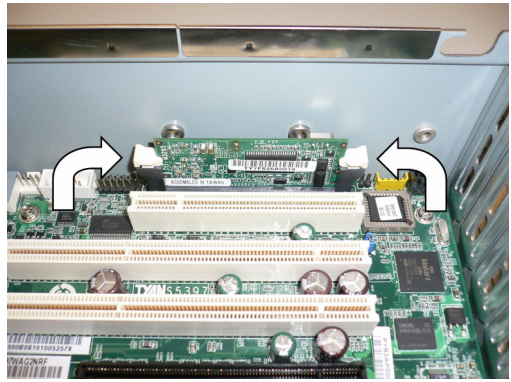
1. Locate the SO-DIMM TARO card socket on the motherboard. See “System Internal View” on page 14 for the SO-DIMM socket location.
2. Press the SO-DIMM socket locking levers in the direction of the arrows as shown below.



3. Insert the TARO card into the socket as shown below.

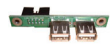


4. When inserted properly, the SO-DIMM socket locking levers lock automaticaly onto the indentations at the ends of the TARO card.



Appendix IV: FRU Parts List

TA26-B5397 FRU Parts					
Item	Model Number	Part Number	Picture	Quantity	Description
Motherboard	S5383WG4NR			1	TYAN S5397WAG2NRF Motherboard
Chassis Unit	CCHA-0090	432731500003		1	TA26 2U Chassis
Chassis Top Cover	CCCV-0020	340731500032		1	Top Cover for TA26 Chassis
Drive Tray	CHDT-0030	340731500035		8	Removable 3.5" HDD Tray
Power Supply	CPSU-0160	471172400087		1	700W Single Power Supply
	CPSU-0350	471015200193		2	700W 1+1 redundant PSU module
	CPSU-0351	471015200197		1	700W 1+1 redundant PSU cage
	CMPT-0150	342772500002		1	700W 1+1 redundant PSU bracket_1
	CMPT-0151	342772500003		1	700W 1+1 redundant PSU bracket_2
FAN	CFAN-0250	336252012306		2	80X80X38mm Fan, 12V, 7500rpm, 4-pin
	CFAN-0200	336252012269		1	60X60X38mm Fan, 12V, 8000rpm, 4-pin

TA26-B5397 FRU Parts					
Item	Model Number	Part Number	Picture	Quantity	Description
Heat Sink & Cooler	CHSK-0330	343772500003		2	LGA771 CPU Heatsink
	CHSB-0080	342748500001		2	CEK Spring for LGA771
	CHSB-0120	340772500001		2	CPU Backplane Kit
PCBA	CPCA-0270			1	Front Control Board
	M1220			1	SAS/SATA 8-port Backplane, Dual Host
	CPCA-0080			1	Front Control Board
	CPCA-0250			1	Slim DVD ROM Adapter Board
	M3295-2			1	SMDC Card
	M3296			1	SMDC Card
	M1212			1	SCSI 8-port Backplane
Peripheral Drives & Parts	CDVD-0020	523410299023		1	Slim DVD ROM
	CFDD-0010	523411442080(TF) 523411442047		1	3.5" FDD, Black

TA26-B5397 FRU Parts					
Item	Model Number	Part Number	Picture	Quantity	Description
Rack Mounting Part	CEAR-0100	340731500062		1	Mounting Ear Left
	CEAR-0110	340731500063		1	Mounting Ear Right
	CRAL-0040	340755700002		1	Slide Rail Kit
Cable Set	CCBL-0310	332810000280		1	A/C Power Cord, 2440mm, US Type
	CCBL-0300	332810000281		1	A/C Power Cord, 1800mm, Germany Type
	CCBL-067C	422772500001		1	Mini SAS Cable, 36P to 4X7P, 400mm
	CCBL-067D	422772500002		1	Mini SAS Cable, 36P to 4X7P, 300mm
	CCBL-0130	422732600022		1	Slim CD ROM FFC Cable
	CCBL-0090	422732600023		1	HDD LED Cable, 10-pin, 200mm
	CCBL-0100	422732600024		2	HDD LED Cable, 14-pin, 200mm

TA26-B5397 FRU Parts					
Item	Model Number	Part Number	Picture	Quantity	Description
	CCBL-0111	422763200001		1	Control Board Cable
	CCBL-0358	422763200005		1	USB Internal Cable, MB to Backplane, 300mm
	CCBL-0359	422763200006		1	USB Cable, Backplane to LED Board, 130mm
	CCBL-0120	422732600018		1	LED Board Cable, 253mm
	CCBL-0433	422740900009		1	DVD ROM Cable, 395mm
	CCBL-0144	422763200004		1	Chassis Intrusion Cable, 800mm
	CCBL-0841	422763200002		1	FAN Cable, 380mm
	CCBL-0810	422732600020		1	Floppy Cable, 610mm
	CCBL-0820	422732600021		1	Floppy Power Cable, 90mm
	CCBL-0250	422731500032		2	SCSI Cable, 68-pin, MB to Backplane, 480mm
	CCBL-0260	422731500033		1	SCSI Cable, 68-pin, Daisy Chaining, 35mm

Technical Support

If a problem arises with your system, you should first turn to your dealer for direct support. Your system has most likely been configured or designed by them and they should have the best idea of what hardware and software your system contains. Hence, they should be of the most assistance for you. Furthermore, if you purchased your system from a dealer near you, take the system to them directly to have it serviced instead of attempting to do so yourself (which can have expensive consequences).

If these options are not available for you then TYAN Computer Corporation can help.Besides designing innovative and quality products for over a decade, TYAN has continuously offered customers service beyond their expectations. TYAN's website (**www.tyan.com**) provides easy-to-access resources such as in-depth Linux Online Support sections with downloadable Linux drivers and comprehensive compatibility reports for chassis, memory and much more. With all these convenient resources just a few keystrokes away, users can easily find the latest software and operating system components to keep their systems running as powerful and productive as possible. TYAN also ranks high for its commitment to fast and friendly customer support through email. By offering plenty of options for users, TYAN serves multiple market segments with the industry's most competitive services to support them.

"TYAN's tech support is some of the most impressive we've seen, with great response time and exceptional organization in general" - Anandtech.com

Please feel free to contact us directly for this service at **tech-support@tyan.com**

Help Resources:

1. See the beep codes section of this manual.

2. See the TYAN website for FAQ's, bulletins, driver updates, and other information: http://www.tyan.com

3. Contact your dealer for help BEFORE calling TYAN.

4. Check the TYAN user group: alt.comp.periphs.mainboard.TYAN

Returning Merchandise for Service

During the warranty period, contact your distributor or system vendor FIRST for any product problems. This warranty only covers normal customer use and does not cover damages incurred during shipping or failure due to the alteration, misuse, abuse, or improper maintenance of products.

NOTE: A receipt or copy of your invoice marked with the date of purchase is required before any warranty service can be rendered. You may obtain service by calling the manufacturer for a Return Merchandise Authorization (RMA) number. The RMA number should be prominently displayed on the outside of the shipping carton and the package should be mailed prepaid. TYAN will pay to have the board shipped back to you.

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